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The Antarctic Demonstrator for the Advanced Particle-astrophysics Telescope (ADAPT)

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The Antarctic Demonstrator for the Advanced Particle-astrophysics Telescope (ADAPT) is a suborbital mission designed to detect MeV to GeV gamma rays. The instrument consists of four layers of a scintillating fiber tracker plus an active converter tracker made of CsI scintillating crystals read out by wavelength shifting (WLS) fibers. Both scintillating and WLS fiber signals will be detected with Silicon Photomultipliers (SiPM). Fast and low power front-end electronics are being developed based on the SMART ASIC for SiPM signal amplification before the successive digitization stage. The ADAPT project will serve as technology demonstrator for the larger Advanced Particle-astrophysics Telescope (APT) mission, which will have a much larger area of 3x3 m2. The ADAPT instrument will feature a 30-day balloon flight, with the possibility of detecting prompt signals from Gamma-Ray Bursts (GRBs) with degree-scale localization and polarization constraints. In this contribution, we will present the ADAPT project and its current status, with a particular focus on the FEE electronics development.

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